UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,669	07/20/2001	Gregory S. Francis	920070.406	3153

27370	7590	03/29/2006

OFFICE OF THE STAFF JUDGE ADVOCATE
U.S. ARMY MEDICAL RESEARCH AND MATERIEL COMMAND
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EXAMINER
ZHOU, TING

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/910,669	FRANCIS ET AL.
Office Action Summary	Examiner	Art Unit	
	Ting Zhou	2173	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>05 January 2006</u>.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-8, 10-17 and 19-26</u> is/are rejected.

7) ☒ Claim(s) <u>9, 18 and 27</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   The amendment filed on 5 January 2006 have been received and entered. Claims 1-27 as

amended are pending in the application.

2.   It is noted that claims 9, 18 and 27 are previously indicated as allowable subject matter.

Allowable Subject Matter

3.   Claims 9, 18 and 27 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

4.   The following is a statement of reasons for the indication of allowable subject matter:

Claims 9, 18 and 27 each identify the distinct feature of "assigning at least one label of the

labeled at least two buttons among the two or more buttons on the one or more displayed pages

on the basis of an optimization procedure selected from an optimization-procedure group

including a gradient descent substantial optimization procedure and a simulated annealing

substantial optimization procedure". The closest prior art, Wagner et al. U.S. Patent 6,002,395,

teaches a method of building a graphical user interface via substantially optimizing the screen

premium. The prior art fails to teach an optimization procedure selected from an optimization-

procedure group including a gradient descent substantial optimization procedure and a simulated

annealing substantial optimization procedure and thus fails to anticipate or render the above

limitations obvious.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-5, 8, 10-14, 17, 19-23 and 26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wagner et al. U.S. Patent 6,002,395 (hereinafter "Wagner") and Shirayanagi

U.S. Publication 2001/0050752.

Referring to claims 1, 10 and 19, Wagner teaches a method and system comprising means

and circuitry (the developmental computing system comprising a processor, memory, and

display taught in the Wagner et al. reference comprises circuitry) (Wagner: column 3, lines 18-

30) for accepting user input specifying a geometrical arrangement of two or more buttons on one

or more displayed pages (using the GUI builder to specify a placement of buttons such as

"PIZZAS", "SANDWICHES", "COFFEE", etc. in the sample pizza shop application shown in

Figure 2A, which is an example of the reference's teachings) (Wagner: column 2, lines 21-28,

column 3, lines 45-52 and column 4, lines 36-53), means and circuitry for accepting user input

labeling at least two of the two or more buttons on the one or more displayed pages (naming the

titles of the buttons shown in Figure 2A; for example, assigning the name "SPECIAL DELUX"

to button represented by reference number "211-3") (Wagner: column 4, lines 37-46 and further

shown Figures 3A-3C, which show controls representing the position and name of the desired

button on the GUI), means and circuitry for accepting user input defining at least one interaction

between the labeled at least two buttons (relationships between buttons, for example, pressing

the "BEER" button in Figure 2A deletes and replaces the buttons in the "DRINK" screen)

(Wagner: column 4, lines 54-62), means and circuitry for accepting user input specifying at least

one constraint cost for the defined at least one interaction (parent child relationship between

screens and buttons; for example, it can be seen that the buttons "PIZZAS", "SPECIAL

PEPPERONI", "SPECIAL DELUX" and "SPECIAL VEGGIE" would need to be placed

together under the "PIZZA" category in Figure 2A) (Wagner: column 4, lines 11-21 and 36-47),

and means and circuitry for automatically assigning labels of the at least two buttons among the

two or more buttons on one or more displayed pages such that the at least one constraint cost is

substantially optimized (controls shown in Figures 3A-3C associated with each button shown in

Figures 2A-2D; for example, in order to optimize screen space, related items such as "PIZZAS",

"SPECIAL PEPPERONI", "SPECIAL DELUX" and "SPECIAL VEGGIE" would be

automatically labeled and placed together under the "PIZZA" category; as another example,

when the "Beer" button is pressed, only the "Drinks" screen is automatically deleted and

replaced, or labeled with new buttons, i.e. Wagner inherently teaches automatically arranging the

multiple screens for the touch screen display in order to optimize parent/child relationships,

interactions of buttons and screen space) (Wagner: column 4, lines 1-62 and column 13, lines 32-

67 and Figure 4). This is further recited in column 17, lines 1-10, column 26, lines 5-35 and

shown in Figures 5B and 5C, where logic is given to modify and move buttons and screens

according to their relationships. However, Wagner fails to explicitly teach the constraint cost

having a corresponding constraint cost value and the at least one constraint cost value is

indicative of an optimization of the at least one constraint cost. Shirayanagi teaches a design and optimization solution similar to that of Wagner. In addition, Shirayanagi further teaches calculating at least one constraint cost value corresponding to the at least one constraint cost, and the at least one constraint cost value is indicative of a relative optimization of the at least one constraint cost (values are associated with parameters, or evaluation functions such as constraints; optimization occurs that minimizes the evaluation functions, such that the evaluation function values are closer to zero) (Shirayanagi: page 2, paragraph 0022-page 3, paragraph 0025). It would have been obvious to one of ordinary skill in the art, having the teachings of Wagner and Shirayanagi before him at the time the invention was made to modify the method for building a graphical user interface of Wagner to include the use of constraint cost values for optimization taught by Shirayanagi. One would have been motivated to make such a combination in order to allow easy and fast optimization of parameters, reducing the cost of labor and preserving design repeatability.

Referring to claims 2, 11 and 20, Wagner, as modified, teach accepting user input specifying one or more sizes of the one or more displayed pages (Wagner: column 17, lines 1-10).

Referring to claims 3, 12 and 21, Wagner, as modified, teach accepting user input specifying two or more locations (positions) of the two or more buttons on the one or more displayed pages (Wagner: column 8, lines 61-67 and column 9, lines 1-4 and lines 34-52).

Referring to claims 4, 13 and 22, Wagner, as modified, teach accepting user input labeling (naming) at least two buttons on a first displayed page presented to the user (Wagner: column 4, lines 11-21 and column 24, lines 16-24).

Referring to claims 5, 14 and 23, Wagner, as modified, teach accepting user input

labeling at least one button on a first displayed page presented to the user and accepting user

input labeling at least one button on a second displayed page presented to the user (for example,

labeling the button "211-2" as "SPECIAL PEPPERONI" in Figure 2A on the first displayed

screen, and the button "231-7" as "INDIVIDUAL PAN" in Figure 2D on a subsequently

displayed screen) (Wagner: column 4, lines 11-21 and column 24, lines 16-24).

Referring to claims 8, 17 and 26, Wagner, as modified, teach accepting user input

specifying at least one weighting factor to be associated with the specified at least one constraint

cost (evaluated values are weighted) (Shirayanagi: page 6, columns 0084 and 0091 and further

shown in Figure 4).

6.   Claims 6-7, 15-16 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Wagner et al. U.S. Patent 6,002,395 (hereinafter "Wagner") and Shirayanagi U.S.

Publication 2001/0050752, as applied to claims 1, 10 and 19 above, and further in view of

Ikemoto U.S. Patent 5,969,717.

Referring to claims 6, 15 and 24, while Wagner and Shirayanagi teach all of the

limitations as applied to the claims above, they fail to explicitly teach accepting user input

identifying at least one relationship between the labeled at least two buttons selected from a

group including a Fitt's movement interaction, a Euclidean-distance interaction, a city-block

distance interaction, an x-directed interaction and a y-directed interaction. Ikemoto teaches a

method for specifying an arrangement of at least two buttons in building a GUI (column 2, lines

32-46 and further shown in Figure 1) similar to that of Wagner and Shirayanagi. In addition,

Ikemoto further teaches identifying the relationship between buttons including a position and
distance interaction of the buttons (x-directed distance between components and y-directed
distance between components) (Ikemoto: column 6, lines 56-59, column 7, lines 1-7 and column
10, lines 29-44). Fitt's movement interaction, Euclidean-distance interaction, a city-block
distance interaction, a x-directed interaction and y-directed interaction are all distance related
relationships and therefore, could be included in the group of relationships defined between the
labeled buttons. It would have been obvious to one of ordinary skill in the art, having the
teachings of Wagner, Shirayanagi and Ikemoto before him at the time the invention was made, to
modify the GUI building method of Wagner and Shirayanagi to include the use of distance
related metrics to define relationships between GUI components, as taught by Ikemoto. One
would have been motivated to make such a combination in order to create an efficient interactive
process between the user and the GUI builder program; by allowing the users to specifying
exactly the distance between each and every component on the display screen, users will be able
to create an interface customized to their preferences and needs.

Referring to claims 7, 16 and 25, while Wagner and Shirayanagi teach all of the
limitations as applied to the claims above, they fail to explicitly teach specifying at least one
constraint cost for the at least one interaction selected from a group including a global-difficulty
cost, a pages-to-close-buttons cost, a pages-to-fixed buttons cost, a path-difficulty cost, a pages-
to-far buttons cost, and a parent-to-child variability cost. Ikemoto teaches a method for
specifying a relationship and interaction between components of a GUI (column 13, lines 25-42
and further shown in Figures 12 and 14) similar to that of Wagner and Shirayanagi. In addition,
Ikemoto further teaches identifying the constraint cost for the interaction of components

including a pages-to-far buttons cost and a parent-child variability cost (components that are

unrelated to each other are placed in separate areas on the display screen and a consistent

hierarchical parent-child display of components) (Ikemoto: column 13, lines 25-42 and further

shown in Figures 12, 15A and 21). Global-difficulty cost, a pages-to-close-buttons cost, a pages-

to-fixed buttons cost, a path-difficulty cost, a pages-to-far buttons cost, and a parent-to-child

variability cost are all types of interaction relationships between components and therefore, could

be included in the group of constraint cost relationships between GUI components. It would

have been obvious to one of ordinary skill in the art, having the teachings of Wagner,

Shirayanagi and Ikemoto before him at the time the invention was made, to modify the GUI

building method of Wagner and Shirayanagi to include the use of constraint costs for the

interaction of GUI components, as taught by Ikemoto. One would have been motivated to make

such a combination in order to create an efficient interactive process between the user and the

GUI builder program; by allowing the users to specifying exactly what factors and relationships

are the most important in placing components on the display screen, users will be able to create

an interface customized to their preferences and needs.

Response to Arguments

7.   Applicant's arguments with respect to claims 1, 10 and 19 have been considered but are

moot in view of the new ground(s) of rejection.

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this
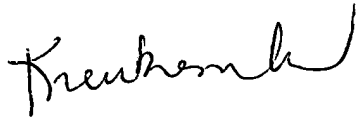
final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The

examiner can normally be reached on Monday - Friday 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the

organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TZ

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PRIMARY EXAMINER